

REMARKS

Applicants appreciate the indication that claims 1-33 and 39-100 are allowed.

Claims 34 and 35 are rejected as being anticipated by U.S. Patent 5,581,350 to Chen et al. The rejection is respectfully traversed as applied to Claim 34 as amended.

Amended Claim 34 clearly requires a first instrument causing motion of the sample and a second instrument causing motion between the first instrument and the detection system, and the motions move the illuminated spot to a desired location on the structure measured. Chen et al. clearly fails to teach or suggest such a feature.

Column 14, lines 22-35 of Chen et al. referred to by the examiner at the bottom of page 2 of the Office Action describes the movement of plate 6A for passing only those rays of the reflective beam which have reflected from sample 3 at incidence angles in a selected narrow range (column 14, lines 24-26). The motion of plate 6A, however, does not move the illuminated spot on sample 3. In fact, the overall setup of the instrument in Fig. 4 of Chen et al. appears to assume that, despite the movement of plate 6A, the collection system collects the reflective beam from a spot on the surface of sample 3 that is essentially stationary. Column 12, lines 5-7 of Chen et al. states that stage 63 is "for moving sample 3 relative to the ellipsometer's optical components and relative to objective 40." The illumination optics including elements such as polarizer 5 and focus mirror 4, as well as the focusing and pattern recognition 80 and objective 40, appear to be stationary and do not move relative to stage 63. Therefore the illuminated spot in Chen et al. appears to be stationary and does not move relative to stage 63. The surface of sample 3 is scanned by means of stage 63 which moves the sample relative to the illumination and collection optics. The apertured plate 6A is a portion of the collection system, collecting light reflected by sample 3 originating from the illumination optics such as focus mirror 4. Therefore, it is apparent that, despite the movement of plate 6A, the collection system also assumes a stationary spot on sample 3 from which the reflected rays are collected by the detection system. Hence, despite movement of plate 6A, the overall location of the collection system does not move relative to stage 63, and the movement of plate 6A does not cause the location of the spot to move.

In contrast, in claim 34, the detection system is also moved relative to the instrument that moves the sample or wafer in order to move the location of the illuminated spot on the sample.

It is believed to be well settled that in order for a reference to anticipate a claim, there must be identity of elements between those of the reference and those of the claim. Chen et al clearly fails this test. Since it has failed to teach or suggest the above-described feature, namely, that of a second instrument causing motion between a first instrument that moves the sample and the detection system to move location of the illuminated spot on the structure.

As clearly explained in the specification from page 9, line 12 through page 11, line 11, by employing 2 different instruments, a first instrument for moving the sample and the other for moving the detection system relative to the first instrument in order for the illuminated spot to scan the wafer, the footprint of the overall system can be minimized. In Chen et al., on the other hand, the movement of the apertured plate 6A is to select a narrow range of incidents angles from a reflected beam, which has been reflected from the sample at a range of different incidents angles. As noted above, the motion of the plate 6A is unrelated to moving the illuminated spot on the sample and has nothing to do with minimizing footprints. Therefore, it is further believed that Claim 34 is non-obvious over Chen et al. Claim 34 is therefore is believed to be allowable.

Claim 35 is believed to be allowable since it depends from allowable Claim 34. Applicants appreciate the indication that Claims 36-38 are merely objected to as being dependant on the rejected base claim, but are presumably allowable if rewritten into independent form. Since Claim 34 upon which these claims depend is now believed to be allowable, Claims 36-38 have not been so rewritten.

Claim 101 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,872,632. The rejection is traversed in so far as it is applied to Claim 101 as amended.

While Moore discloses a cluster tool that somewhat resembles Claim 101, it fails to teach or suggest a measurement system that includes a scatterometry measurement instrument that can be used for measuring an optical characteristic of the wafer by

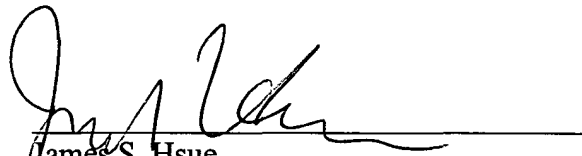
detecting radiation scattered from patterned features on the wafer. In column 4, lines 49-67, for example, Moore describes the use of a Michaelson interferometer for measuring the optical thickness of layers on the sample and fails to teach or suggest the use of the scatterometry measurement instrument or a method that involves the measurement of an optical characteristic of the wafer by detecting radiation scattered from patterned features on the wafer.

There is thus no identity of elements between Moore and amended Claim 101 so that Moore fails to anticipate Claim 101. Claim 101 is further believed to be non-obvious over Moore in view of the vast differences in the purposes of the method involved. The method of Claim 101 measures radiation scattered from patterned features on the wafer by means such as a scatterometry measurement instrument where as Moore measures optical thickness by means of a Michaelson interferometer.

Claims 1-101 are presently pending in the application. Reconsideration of the rejections is respectfully requested and an early indication of allowability of all of the claims is earnestly solicited.

Please change any additional fees required or credit any overpayment to our Deposit Account No. 502664.

Respectfully submitted,


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